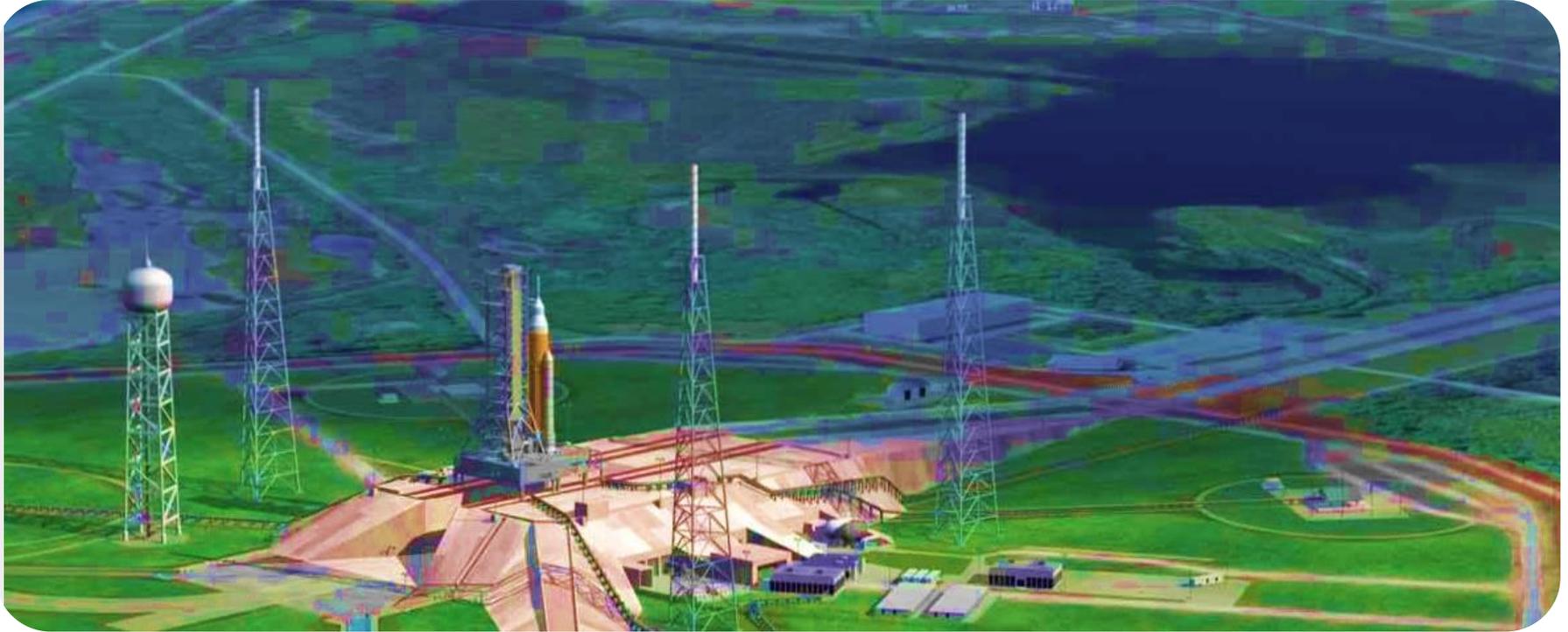




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NASA Kennedy Space Center Center-Wide Operations



**Draft Programmatic Environmental Impact Statement
Public Meetings**

March 29th and March 30th, 2016



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Welcome

**Kennedy
Space
Center**

Center-Wide Operations Draft Programmatic Environmental Impact Statement

**Don Dankert
KSC Environmental Management Branch**



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Purpose of Today's Meeting

Explain the National Environmental Policy Act (NEPA) process and the public involvement portion of that process

Explain the content and the background of the KSC Master Plan and the rationale for the development of the Programmatic Environmental Impact Statement (PEIS)

Provide an overview of the PEIS to facilitate your review

Solicit public comment and input on the PEIS



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What is NEPA?



The National Environmental Policy Act (NEPA) requires all Federal agencies to prepare environmental impact statements (EISs) for major Federal actions that significantly affect the quality of the human environment.

ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ

ΠΡΟΓΡΑΜΜΑ ΔΡΑΣΗΣ ΓΙΑ ΤΟ ΕΚΤΕΛΕΣΗ



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What is an EIS?

Environmental Impact Statement (EIS): A full disclosure document that details the process through which a project was developed, includes consideration of a range of reasonable alternatives, analyzes the potential impacts resulting from the alternatives, and demonstrates compliance with other applicable environmental laws and executive orders. An EIS can be prepared for a specific project or for a broad Federal action.

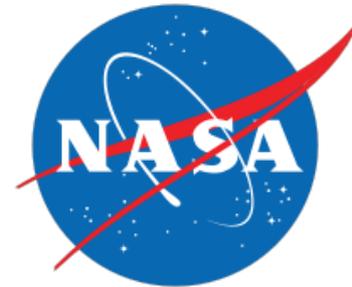




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Why a PEIS?

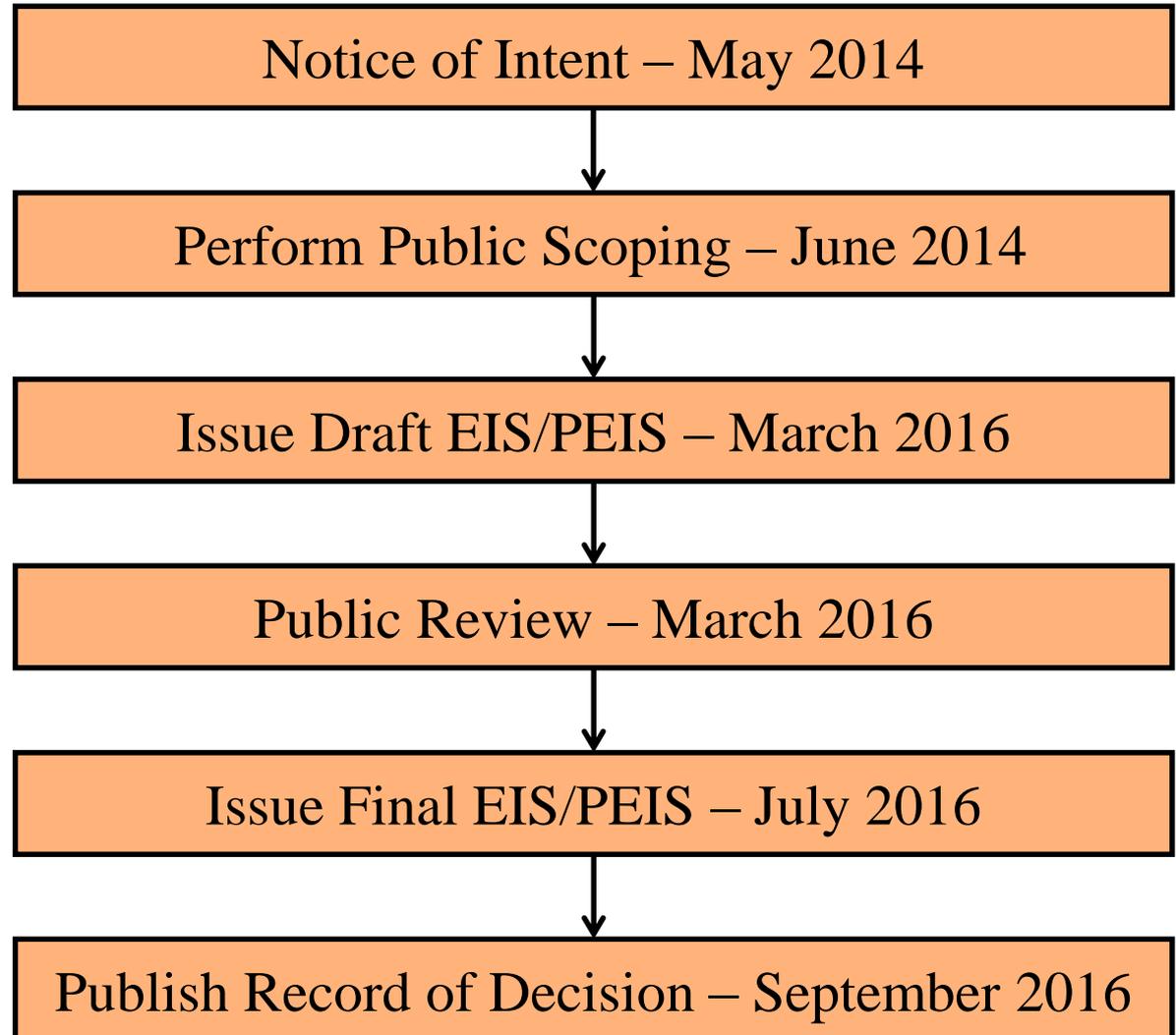
Programmatic Environmental Impact Statement (PEIS): A general study of the potential effects on the environment from a Federal program. Agency can then tier Environmental Assessments (EAs) or EISs from the PEIS.





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The NEPA Process





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Public Involvement

Comments are one of the most important contributions from citizens.

Effective Comments:

- Clear, concise and relevant to the analysis
- Solution oriented, provide specific examples
- Identify any areas of environmental concern that are important to you
- Suggest additional alternatives
- Suggest sources of relevant data or information for consideration





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Master Plan Update

Mario Busacca

KSC Spaceport Planning

March 2016





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KSC's Mission

NASA Space Launch System (SLS)

- Five to seven flights over next 20 years

Commercial Crew Program

- Two commercial providers to ISS

Launch Services Program

- Payloads to earth orbit and beyond

Extended ISS Mission to 2024

Support commercial space industry

- Per NASA 2010 Authorization Act
- Leasing of assets and land



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KSC's Master Plan

KSC Master Plan has been in work since 2010

- First major update since 2002

The first product was the Future Development Concept (FDC) in 2012

- Charrette with attendees from industry, federal, state, local partners
- KSC first Center to develop an FDC and get approval
- Provides the basis for the Plan in the Draft PEIS

This KSC Master Plan provides the tools and analyses to support future decisions regarding development and asset utilization

- Approved in 2014
 - Planned Background
 - Existing Conditions
 - Future Development



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KSC's Master Plan Core Strategies

Supporting
NASA
Mission and
Program

Ensure that the Space Launch System (SLS), Orion, Commercial Crew Program (CCP), International Space Station (ISS), and Launch Services Provider (LSP) activities are fully operational and have fully capable facilities, assets, and resources.

Divesting
without
Diminishing

Divesting of assets without eliminating capability to serve both critical government missions and programs while encouraging the growth of commercial space transportation market needs.

Going
Leaner and
Greener

Improve operational, fiscal and environmental sustainability.

Enhancing
the Multi-
User
Spaceport

Enhancing the NASA program field installation to a Multi-User Spaceport of Federal property.



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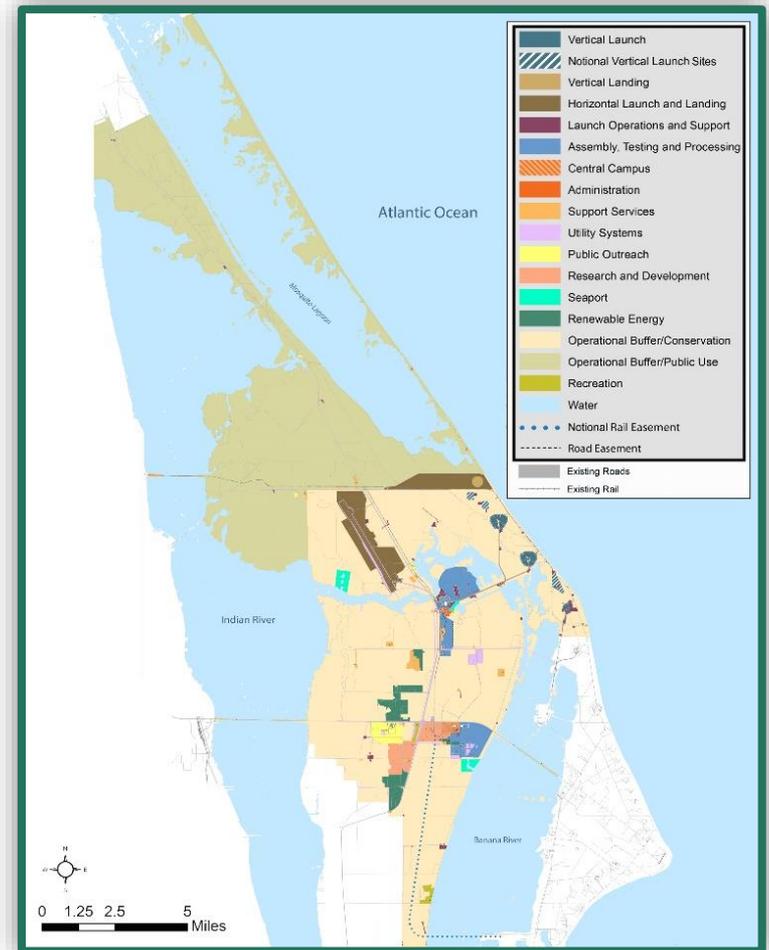
KSC's Future Land Use Plan Proposed Action

Provides for functional areas and zones of activity

- Government only
- Industrial
- Commercial

Web-enabled platform

- <http://masterplan.ksc.nasa.gov/>





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Overview of the Draft PEIS

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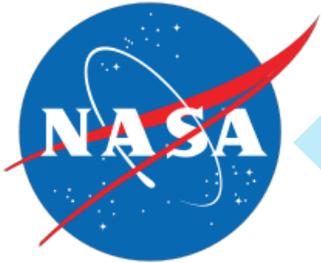
Center-Wide Operations Draft Programmatic Environmental Impact Statement

**Leon Kolankiewicz
PEIS Project Manager
Solv**



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Public Review Period



NASA published the Notice of Availability of the Draft PEIS in the *Federal Register* on March 4, 2016.



EPA published the Draft PEIS itself on the Web on March 18, 2016.



Written comments are due by May 2, 2016.



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Availability of the Draft PEIS

The Draft PEIS is available online at:

1. NASA's project website

<http://environmental.ksc.nasa.gov/projects/peis.htm>

2. The EPA's website

<https://cdxnodengn.epa.gov/cdx-enepa-II/public/action/eis/details?eisId=205030>



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Availability of the Draft PEIS

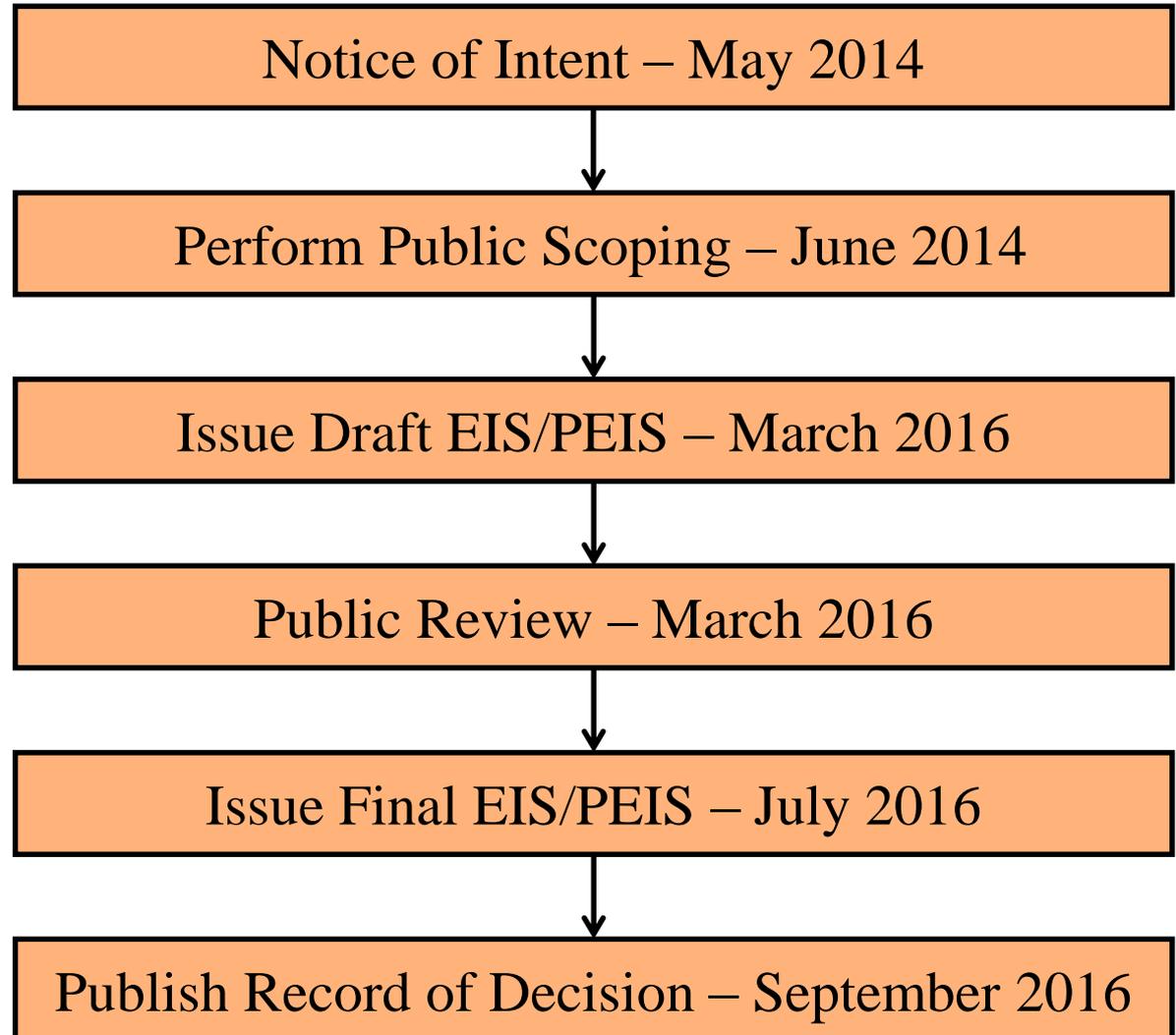
The Draft PEIS is also available at the following public libraries in the area:

- Titusville Public Library
- Cape Canaveral Public Library
- Cocoa Beach Public Library
- Merritt Island Public Library
- Port St. John Public Library
- New Smyrna Beach Public Library



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The NEPA Process





Major Contents of an EIS

1. Purpose & Need

What are you trying to achieve?

2. Alternatives

How can you achieve it?

3. Affected Environment/ Environmental Consequences

What resources will be affected?
What effects would each alternative have?
What could be done about them?



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1. Purpose and Need



Purpose: To facilitate KSC's 20-year transformation from a government and program-focused, single-user launch complex to a more capability-centric and cost-effective multi-user spaceport.

Need: To update KSC's Center Master Plan in a manner that supports achievement of NASA's programmatic mission objectives, while also maximizing the provision of excess capabilities and assets in support of non-NASA access to space.



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2. Alternatives

As a result of comments received during public scoping, NASA developed three alternatives that were assessed in this PEIS:

No Action Alternative

Each NASA program would continue to be operated as an independent entity, funded separately, and manage activities and buildings in support of its own program. No change to land use acreages would occur.

Proposed Action

KSC would transition to a multi-user spaceport. A number of new facilities would be constructed, including two seaports and horizontal and vertical launch and landing facilities.

Alternative 1

Similar to the Proposed Action in many regards, this alternative includes differences in siting and the size of vertical and horizontal launch and landing facilities. The two seaports would not be constructed.



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3. Environmental Consequences



- Magnitude – How much?



- Duration or frequency – How long?



- Extent – How far?



- Likelihood – What's the probability?



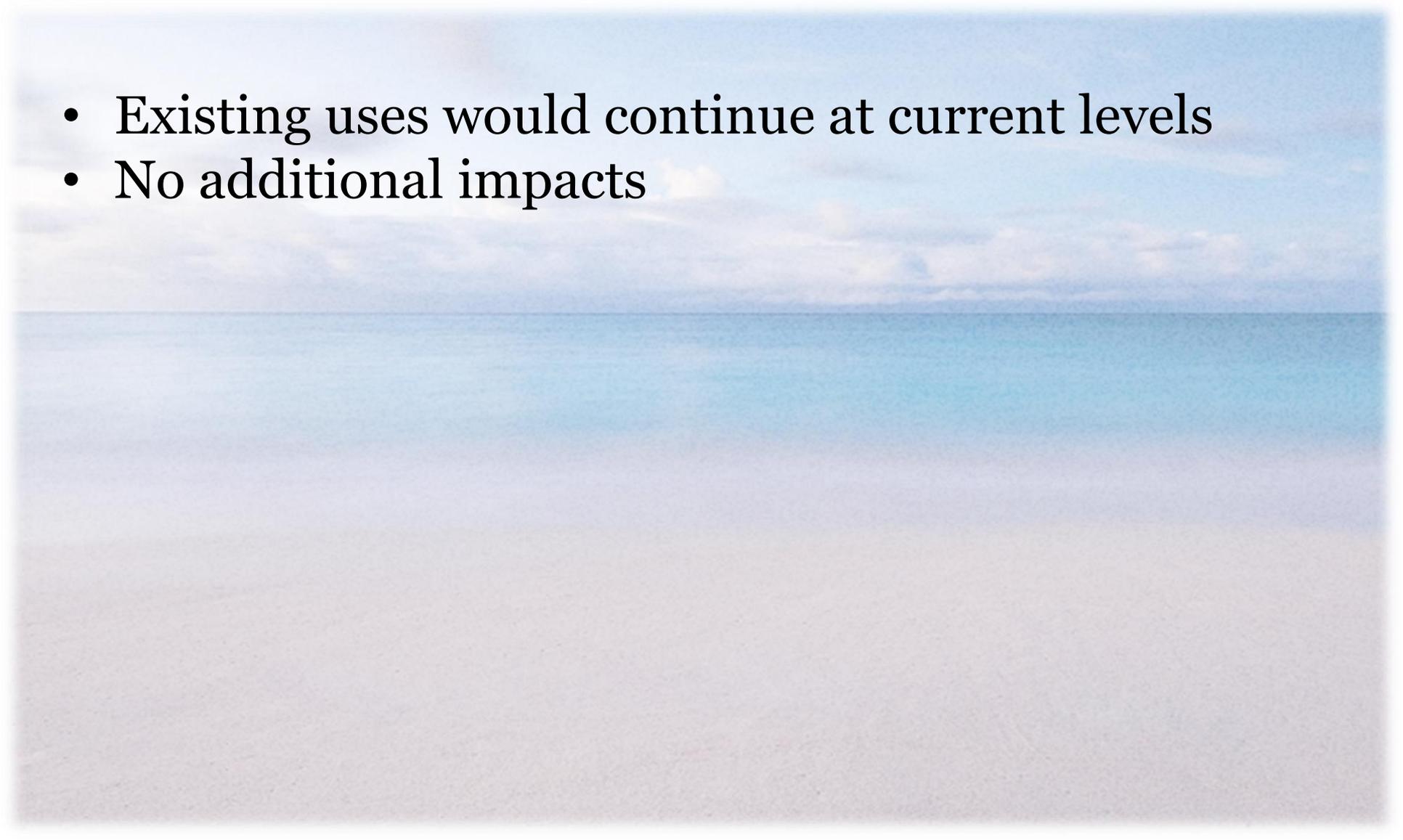
- Precedence/uniqueness – How novel?



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Water Quality/Wetlands No Action Alternative

- Existing uses would continue at current levels
- No additional impacts





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Water Quality/Wetlands Proposed Action and Alternative 1

- Overall impacts (such as from launch site construction) would be adverse but minor-to-moderate, depending on project extent, location, and proximity to surface water.
- Vertical and horizontal launches may cause impacts from:
 - Deposition associated with rocket engine emissions
 - Deposition of spent launch vehicle equipment
 - Landing of re-entry vehicle or equipment
 - Hydrogen chloride (adjacent to launch pad only)
- No substantial impacts on surface waters of nearby lagoons, oceans, large water bodies, due to buffering capacities



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Water Quality/Wetlands Cumulative Impacts

Future development projects may contribute indirectly to cumulative impairment of the Indian River Lagoon complex, as a result of increases in impervious surfaces and non-point source loadings of sediments, nutrients, and contaminants.



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Biological Resources No Action Alternative

No change
from current
impacts of
planned
activities





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Biological Resources Proposed Action

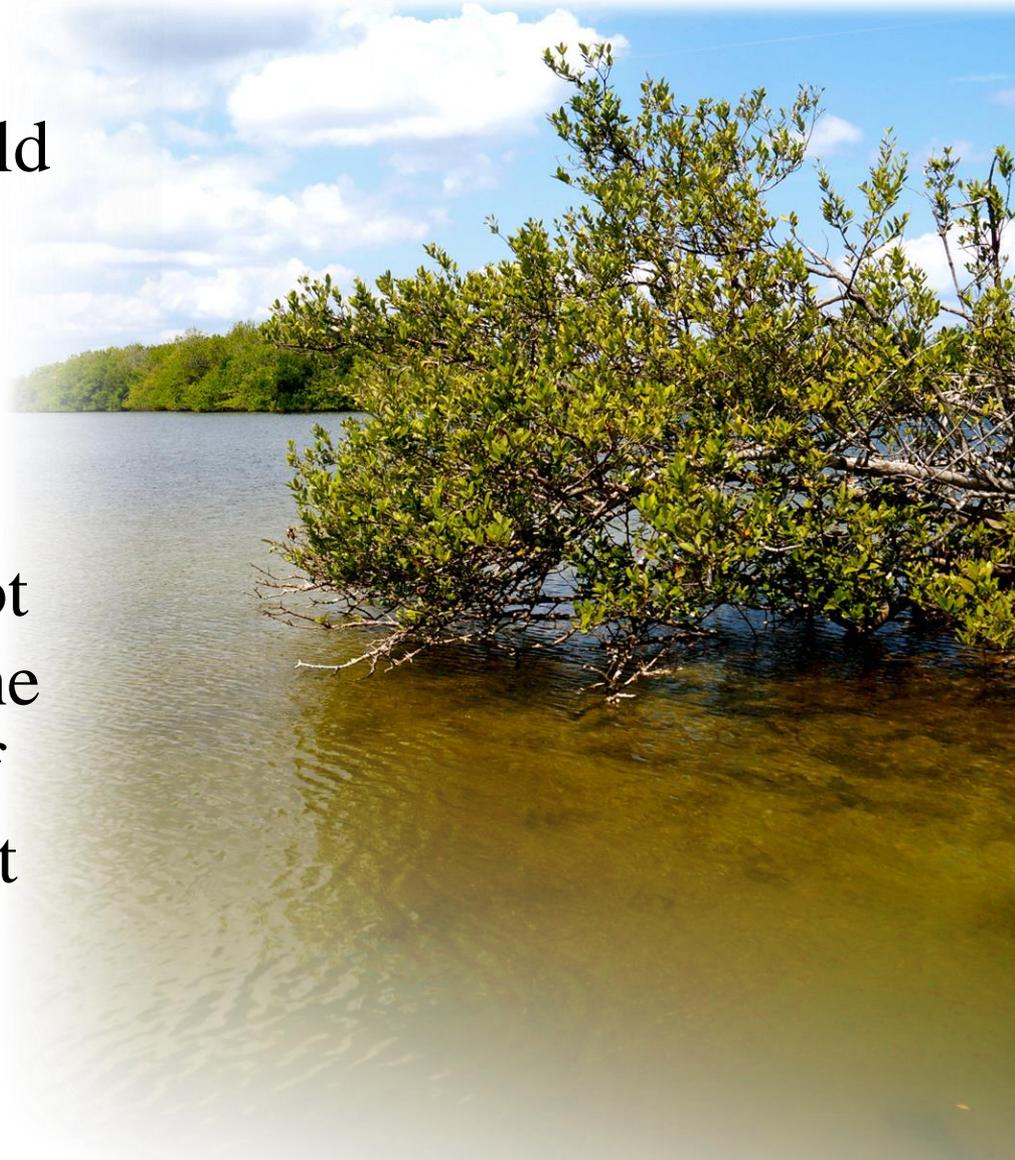
- Under the Proposed Action, 4,406 acres of native vegetation communities (upland and wetland) converted or lost to development (=10% of operational buffer/conservation lands)
- Two proposed seaports would eliminate 286 acres of wetlands habitat
- Launches would have minor-to-moderate adverse impacts on aquatic habitats for the duration of the Plan



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Biological Resources Alternative 1

- The potential impacts would be qualitatively similar to those of the Proposed Action, but quantitatively somewhat less.
- The two seaports would not be constructed, avoiding the elimination of 286 acres of wetlands vegetation/habitat that would occur under the Proposed Action.





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Biological Resources Cumulative Impacts

- Combined habitat loss and fragmentation could produce significant adverse impacts to Florida scrub-jay
- Overall cumulative impacts from climate change and (climate change-related) sea level rise on existing native terrestrial and aquatic wildlife will likely be substantial, adverse, widespread or large extent, and possibly significant, even under the No Action Alternative.



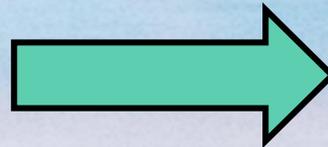


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Climate Change

Federal guidance advises that actions subject to NEPA compliance should be evaluated along two dimensions relative to climate change impacts:

Project Greenhouse Gas Emissions



Climate Change

Climate Change



*Project function,
adaptability,
environmental factors*



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Climate Change No Action Alternative

- KSC would not implement elevation-based zoning and development controls to ensure that any future development is constructed at an elevation of six feet above mean sea level.
- KSC operations would be at somewhat greater risk from the impacts of climate change than they would be if the additional actions were taken.



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Climate Change Proposed Action and Alternative 1

- Both would add a negligible amount to U.S. emissions contributing to global climate change.
- Hardening, improving, or moving facilities in adaptation to potential climate change impacts will require financial investment and funding.
- Consolidation of KSC operations into smaller geographic footprint would reduce facilities' energy use, thereby reducing greenhouse gas emissions and producing beneficial impacts to climate change.
- Continued and increased efforts to power NASA's activities using renewable sources of energy will have a beneficial impact on climate change by reducing greenhouse gas emissions.



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Climate Change Cumulative Impacts

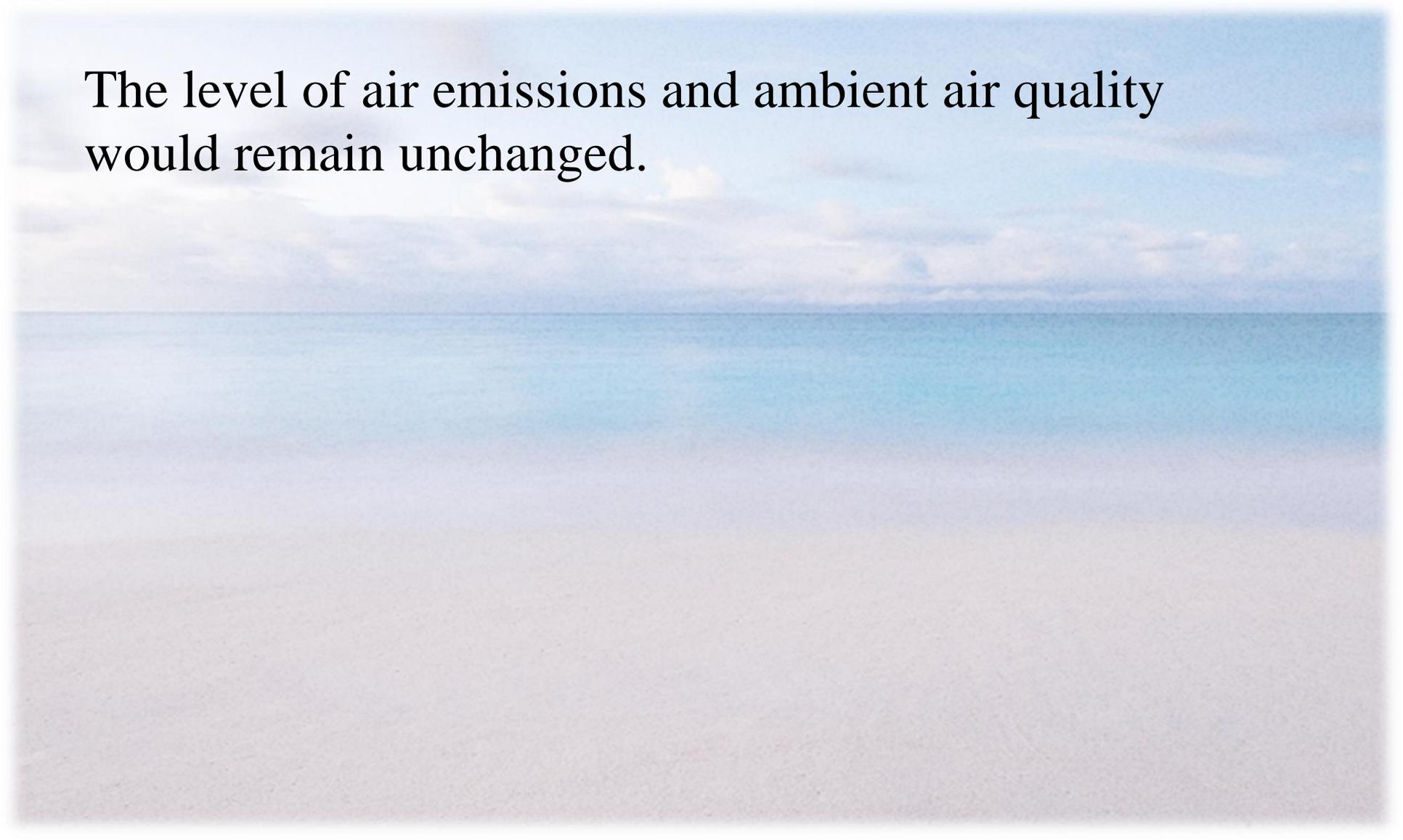
- Sea level rise may cause loss of usable land and inundation of coastal ecosystems.
- More frequent and extreme high temperatures and humidity may cause increased risk of heat-related ailments among outdoor workers; higher cooling costs; decreased utility reliability; damage to buildings.



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Air Quality No Action Alternative

The level of air emissions and ambient air quality would remain unchanged.





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Air Quality Proposed Action and Alternative 1

- Minor, adverse impacts from:
 - Airborne dust and other pollutants generated during construction
 - Introduction of new sources, such as heating boilers and backup generators
 - Increases in transportation-based emissions (launches, automotive traffic)
 - Combustion products, including aluminum oxide, hydrogen chloride, N₂, CO₂, water
- All components of the action are within attainment area



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Air Quality Cumulative Impacts

The cumulative short and long-term adverse impacts would be minor.



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Land Use No Action Alternative



No changes to existing land uses; no additional impacts.



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Land Use Proposed Action and Alternative 1

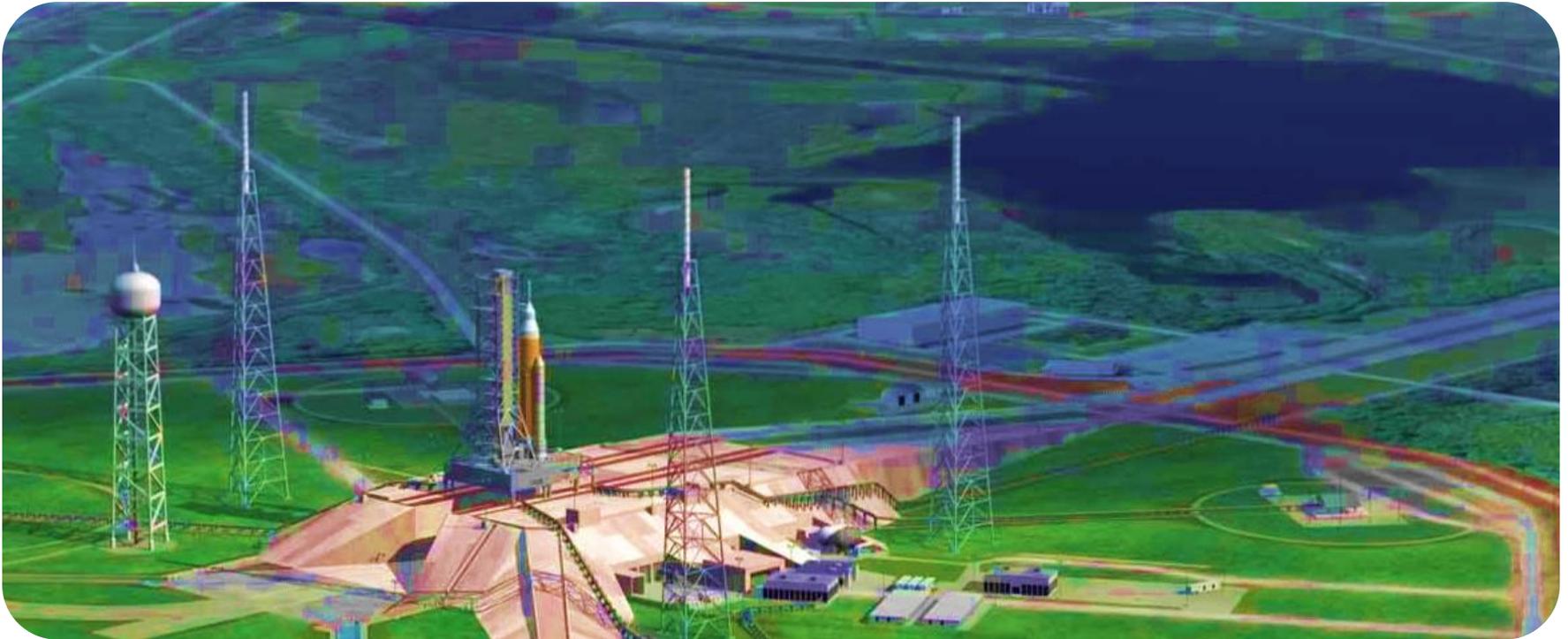
Minor-to-moderate impacts to land use and cover:

- KSC acreage currently used for administration, open space, operational buffer, and support services would decrease
- No change to acreage associated with water or recreation
- Acreages for launches and landings, operations support, R&D, renewable energy, and Assembly, Testing, Processing would increase
- **Alternative 1** would result in similar impacts, but less pronounced without two new seaports.



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Land Use Cumulative Impacts



Overall impacts would likely be moderate, since the only impacts to KSC land use are those resulting from the CMP.



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Socioeconomics No Action Alternative

**No socioeconomic changes to Brevard
or Volusia counties**



Socioeconomics

Proposed Action and Alternative 1

- Potential for minor-to-moderate beneficial impacts from creation of jobs and labor income, most of which would occur as part of the Development Program
- Long-term indirect economic benefits from KSC's transformation to multi-user spaceport, which is expected to attract new tenants (potentially significant)
- Future employees from non-NASA projects would represent new purchasing power to support additional regional jobs and payroll (multiplier effect)
- Impacts from **Alternative 1** would be similar, but on a smaller scale, since two new seaports and other facilities would not be built



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Socioeconomics Cumulative Impacts

The multiplier effect of additional jobs and payrolls would increase over time, producing potentially significant economic benefits in employment, payroll, and economic activity to the area.



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Recreation No Action Alternative

- No additional impacts from CMP activities, although over time, the continued increase in visitor numbers, as well as urban development of the area surrounding the national seashore, will likely degrade visitor experience and the uncrowded beach and lagoon experience at CNS.
- Sea level rise and erosion from climate change, or the need to protect certain areas or species, may alter visitor access to certain parts of CNS and MINWR.





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Recreation Proposed Action

- Development of horizontal launch infrastructure could hinder or delay access to Playalinda Beach, adversely affecting the visitor experience (intermittent closures).
- Development north of Beach Road (vertical & horizontal L & L) would have long-term adverse impacts on recreation at Playalinda and Canaveral National Seashore.
- Development of two seaports could include removal of saltwater marsh or mangroves, impacting boating and fishing by degrading finfish and shellfish spawning grounds and nurseries.



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Recreation Alternative 1

Alternative 1 would likely have fewer impacts on Playalinda Beach and recreation impacts from seaport development would be avoided.





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Recreation Cumulative Impacts



- Additional launches and other development could cause annual visitation to CNS to decrease.
- Increases in water runoff, sedimentation, and potential spills could cumulatively impact water-based recreation around Mosquito Lagoon.



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Hazardous Materials and Waste No Action Alternative



There would be no increase or decrease in the amount of hazardous materials that would be handled, transported, stored or disposed at KSC.



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Hazardous Materials and Waste Proposed Action and Alternative 1

- In general, increase in quantity of hazardous materials
- It is anticipated that the same types of solvents, surface coatings, propellants, fuels may be used
- Handling procedures would not be affected, but increased exposure leads to increased risk
- Higher likelihood of accidental release, mitigated by training and adherence to best management practices



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Hazardous Materials and Waste Cumulative Impacts



No cumulative impacts expected.



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Tell us what you think!

1. Fill out a comment form and leave here with us tonight.

2. Mail comment to: **Mr. Donald Dankert**
Environmental Management Branch, SI-E3
Kennedy Space Center, FL 32899

3. Email comments to:
ksc-dl-centerwide-eis@mail.nasa.gov



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Tell us what you think!

4. Dictate your comment to court reporter.

5. Come up to the microphone and make comments for the record.

